



Crystal River Nuclear Plant
Docket No. 50-302
Operating License No. DPR-72

Ref: 10 CFR 54

June 15, 2011
3F0611-03

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555-0001

Subject: Crystal River Unit 3 – Response to Request for Additional Information for the Review of the Crystal River Unit 3, Nuclear Generating Plant, License Renewal Application (TAC NO. ME0274) and Amendment #21

- References: (1) CR-3 to NRC letter, 3F1208-01, dated December 16, 2008, "Crystal River Unit 3 – Application for Renewal of Operating License"
- (2) NRC to CR-3 letter, dated May 26, 2011, "Request for Additional Information for the Review of the Crystal River Unit 3 Nuclear Generating Plant, License Renewal Application (TAC NO. ME0274)"

Dear Sir:

On December 16, 2008, Florida Power Corporation (FPC), doing business as Progress Energy Florida, Inc. (PEF), requested renewal of the operating license for Crystal River Unit 3 (CR-3) to extend the term of its operating license an additional 20 years beyond the current expiration date (Reference 1). Subsequently, the Nuclear Regulatory Commission (NRC), by letter dated May 26, 2011, provided a request for additional information (RAI) concerning the CR-3 License Renewal Application (Reference 2). Enclosure 1 to this letter provides the response to Reference 2. Enclosure 2 to this letter contains Amendment #21 changes to the License Renewal Application. Enclosure 3 identifies changes to previously submitted RAI responses resulting from the responses to the RAIs in Reference 2. The RAI responses resulted in new License Renewal Commitment #32.

Enclosure 4 provides a list of regulatory commitments contained in this submittal.

If you have any questions regarding this submittal, please contact Mr. Mike Heath, Supervisor, License Renewal, at (910) 457-3487, e-mail at mike.heath@pgnmail.com.

Sincerely,

Jon A. Franke
Vice President
Crystal River Unit 3

JAF/dwh

- Enclosures: 1. Response to Request for Additional Information
2. Amendment #21 Changes to the License Renewal Application
3. Changes to Previous RAI Responses
4. List of Regulatory Commitments

xc: NRC CR-3 Project Manager
NRC License Renewal Project Manager
NRC Regional Administrator, Region II
Senior Resident Inspector
Thomas Saporito

A140
NRR

STATE OF FLORIDA

COUNTY OF CITRUS

Jon A. Franke states that he is the Vice President, Crystal River Nuclear Plant for Florida Power Corporation, doing business as Progress Energy Florida, Inc.; that he is authorized on the part of said company to sign and file with the Nuclear Regulatory Commission the information attached hereto; and that all such statements made and matters set forth therein are true and correct to the best of his knowledge, information, and belief.



Jon A. Franke
Vice President
Crystal River Nuclear Plant

The foregoing document was acknowledged before me this 15 day of June, 2011, by Jon A. Franke.



Signature of Notary Public
State of Florida



(Print, type, or stamp Commissioned
Name of Notary Public)

Personally Known _____ -OR- Produced Identification _____

PROGRESS ENERGY FLORIDA, INC.

CRYSTAL RIVER UNIT 3

DOCKET NUMBER 50 - 302 / LICENSE NUMBER DPR - 72

ENCLOSURE 1

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

REQUEST FOR ADDITIONAL INFORMATION

RAI 3.3.2.2.4-2

Background

NUREG-1800, "Standard Review Plan for Review of License Renewal Applications for Nuclear Power Plants," (SRP-LR) Section 3.3.2.2.4, "Cracking due to Stress Corrosion Cracking and Cyclic Loading," item 1 recommends further evaluation of stainless steel non-regenerative heat exchanger components exposed to high temperature treated borated water in the chemical and volume control system. This section of the SRP-LR states that the effectiveness of the water chemistry control program should be verified to ensure cracking is not occurring and adds that an acceptable verification program includes temperature and radioactivity monitoring of the shell side water and eddy current testing of the tubes.

License renewal application (LRA) Table 3.3.2-42, "Make Up & Purification System," states that stainless steel components exposed to high temperature treated water in the letdown coolers are being age managed for cracking due to stress corrosion cracking and cyclic loading by item 3.3.1-7 and the further evaluation section 3.3.2.2.4 item 1. However, stainless steel components exposed to high temperature treated water in the Make Up & Purification System seal return coolers are being age managed by item 3.3.1-90, which does not require the performance of further evaluation section 3.3.2.2.4 item 1.

Issue

It is not clear to the staff why the Make Up & Purification System letdown coolers and seal return coolers are age managed differently given that these coolers are contained in the same system, constructed of the same material, and presumably share common environments and aging effects. Specifically, it is not clear how this item would otherwise address the management of cracking due to stress corrosion cracking and cyclic loading.

Request

Address how this item would otherwise verify the Water Chemistry Control Program's effectiveness to manage cracking due to stress corrosion cracking and cyclic loading. Additionally, address the basis for not performing eddy current testing.

Response

The seal return coolers at Crystal River Unit 3 (CR-3) will be managed similarly to the letdown coolers. The aging management strategy was described in the Supplemental Response to RAI 3.3.2.2.4-1 submitted on April 26, 2011 (ADAMS Accession ML11117A314).

Consistent with that strategy, cracking is managed using the Water Chemistry Program with verification of program effectiveness provided by the One-Time Inspection Program. The Water Chemistry Program relies on monitoring and control of water chemistry to effectively mitigate aging effects on component surfaces that are exposed to water as a process fluid. The One-Time Inspection Program is a sampling-based program that uses one-time inspections to verify

the effectiveness of an aging management program. While access limitations may preempt the seal return coolers from being selected for inspection, inspections will be performed of surrogate components having similar material, similar form, and exposed to a comparable environment to verify the effectiveness of the Water Chemistry Program.

This response involves a change to the LRA; refer to the information in Enclosure 2.

RAI B.3.3-1

Background

NUREG-1801, "Generic Aging Lessons Learned (GALL) Report" aging management program (AMP) X.S1, "Concrete Containment Tendon Prestress," states that the existing prestressing forces in the containment tendon should not be below the Minimum Required Value (MRV) or the minimum required prestressing force prior to the next scheduled inspection, as required by 10 CFR 50.55a(b)(2)(viii)(B).

Issue

During the audit the staff reviewed the program basis and implementation documents for the applicant's AMP, "Concrete Containment Tendon Prestress Program." In these documents, the MRV, for the dome, vertical, and hoop tendons, is noted as 1215 Kips, 1149 Kips, and 1252 Kips respectively. However, as a result of concrete delamination found during the hydro-demolition of the reactor building wall for steam generator replacement in 2009, all of the vertical and more than half of the hoop tendons have to be retensioned. In addition, the concrete containment has been reanalyzed and MRV for prestressing tendons revised.

Request

Provide the revised MRVs for dome, hoop, and vertical tendons. In addition, provide plans and schedule for revising the affected the portions of the program basis and implementation documents for the Concrete Containment Tendon Prestress Program AMP.

Response

Subsequent to the March 1 – 3, 2011 NRC staff audit of the License Renewal aging management program basis and implementation documents at CR-3, a new concrete delamination was identified in Reactor Building Bay 5-6 during retensioning of the containment tendons in mid-March 2011. As a result, the LRA and responses to RAIs previously submitted to the NRC concerning the Concrete Containment Tendon Prestress Program have been impacted. Accordingly, the following response is provided to address the RAI and the recent operating experience:

CR-3 will develop and submit a plant-specific Concrete Containment Tendon Prestress Program. The plant-specific AMP will be submitted to the NRC for review at least one year prior to the period of extended operation (PEO) and will address plant operating experience from the concrete delaminations and include any revised MRVs and plans and schedules for revising the plant-specific program basis and implementation documents. The plant-specific AMP will follow the criteria of NUREG-1800, SRP-LR, Revision 2, and will ensure aging effects are adequately

managed during the PEO. In addition, CR-3 will develop and submit a revised Tendon Stress Relaxation Analysis and evaluation as part of the plant-specific Concrete Containment Tendon Prestress Program commitment.

This response has resulted in changes to the LRA, previous RAI Responses, and in development of new License Renewal Commitment #32. Refer to the information provided in Enclosure 2 for the LRA and Commitment #32 and in Enclosure 3 for previous RAI responses.

RAI B.3.3-2

Background

GALL AMP X.S1 recommends that the estimated and measured prestressing forces be plotted against time, and the predicted lower limit (PLL), MRV, and trending lines are developed for the period of extended operation. NRC Regulatory Guide (RG) 1.35.1 "Determining Prestressing Forces for Inspection of Prestressed Concrete Containments" provides guidance for calculating PLL and MRV. The trend line represents the trend of prestressing forces based on the actual measured forces. NRC Information Notice, IN 99-10 provides guidance for constructing the trend line.

Issue

In a letter dated December 8, 2010, the applicant, in response to request for additional information (RAI) number RAI 4.5.1-1, stated that regression analyses and log-linear trend plots for the re-tensioned vertical and hoop tendons will be performed as a part of the Concrete Containment Tendon Prestress Program prior to the period of extended operation. In addition, in a letter dated February 25, 2011, the applicant provided a schedule for performing surveillance of the re-tensioned vertical and hoop tendons. According to this schedule, the applicant plans to perform surveillance of the hoop and the vertical tendons only once (during 2011-2012) prior to the period of extended operation.

Request

Provide details on how the regression analyses and log-linear trend plots for the re-tensioned vertical and hoop tendons will be performed using data collected during only one surveillance prior to period of extended operation.

Response

A new concrete delamination was identified in Reactor Building Bay 5-6 during retensioning of the containment tendons in mid-March 2011. As a result, the LRA and responses to RAIs previously submitted to the NRC concerning the Concrete Containment Tendon Prestress Program have been impacted. Accordingly, the following response is provided to address the RAI and the recent operating experience:

CR-3 will develop and submit a plant-specific Concrete Containment Tendon Prestress Program. The plant-specific AMP will be submitted to the NRC for review at least one year prior to the PEO. The AMP will address plant operating experience from the concrete delaminations; and include details for collecting surveillance data, performing the regression analyses and log-

linear trend plots, and a schedule for performing tendon surveillances. The plant-specific AMP will follow the criteria of NUREG-1800, SRP-LR, Revision 2. In addition, CR-3 will develop and submit a revised Tendon Stress Relaxation Analysis and evaluation as part of the plant-specific Concrete Containment Tendon Prestress Program commitment.

This response has resulted in changes to the LRA, previous RAI Responses, and in development of a new License Renewal Commitment #32. Refer to the information provided in Enclosure 2 for the LRA and Commitment #32 and in Enclosure 3 for previous RAI responses.

RAI B.3.3-3

Background

In response to RAI 4.5.1-1, the applicant stated that as a result of concrete delamination found during the hydro-demolition of the reactor building wall for steam generator replacement in 2009, all of the vertical and more than half of the hoop tendons have to be retensioned. The applicant further stated that time dependent losses were used in the calculation for concrete creep, concrete shrinkage, and prestressing steel relaxation. Updated values were used for creep based on original concrete used at Crystal River Unit 3 Nuclear Generating Plant (CR-3). For subsequent surveillances of the vertical tendons and re-tensioned hoop tendons, individual predicted tendon prestress will be calculated in a similar manner.

Issue

Retensioning of all of the vertical and more than half of the hoop tendons will affect the forces in the dome and the undisturbed hoop tendons. In addition, the trend lines previously developed for the undisturbed dome and hoop tendons are not based on updated values of concrete creep. Documents reviewed by the staff during the audit indicate that the applicant plans to use the previously calculated trend lines for the dome and undisturbed hoop tendons.

Request

Explain why the previously calculated trend lines for the dome and undisturbed hoop tendons are acceptable for use during the future surveillances. In addition, describe how two sets of hoop tendons (re-stressed and undisturbed) will be considered for surveillances during the period of extended operation since the MRV and trend lines for the two sets of hoop tendons may be different. Will the two sets of hoop tendons (re-stressed and undisturbed) be treated as two different tendon groups for future surveillances during the period of extended operation?

Response

A new concrete delamination was identified in Reactor Building Bay 5-6 during retensioning of the containment tendons in mid-March 2011. As a result, the LRA and responses to RAIs previously submitted to the NRC concerning the Concrete Containment Tendon Prestress Program have been impacted. Accordingly, the following response is provided to address the RAI and the recent operating experience:

CR-3 will develop and submit a plant-specific Concrete Containment Tendon Prestress Program. The plant-specific AMP will be submitted to the NRC for review at least one year prior

to the PEO. The AMP will address plant operating experience from the recent concrete delaminations; and provide a discussion of tendon surveillances, including re-stressed tendons, and any remaining undisturbed tendons. The plant-specific AMP will follow the criteria of NUREG-1800, SRP-LR, Revision 2. In addition, CR-3 will develop and submit a revised Tendon Stress Relaxation Analysis and evaluation as part of the plant-specific Concrete Containment Tendon Prestress Program commitment.

This response has resulted in changes to the LRA, previous RAI Responses, and in development of a new License Renewal Commitment #32. Refer to the information provided in Enclosure 2 for the LRA and Commitment #32 and in Enclosure 3 for previous RAI responses.

RAI B.3.3-4

Background

GALL AMP X.S1 program consists of an assessment of inspections performed in accordance with the requirements of Subsection IWL of the American Society of Mechanical Engineers (ASME) Code, Section XI, as supplemented by the requirements of 10 CFR 50.55a(b)(2)(viii). ASME Section XI, Subsection IWL, Article IWL-2521 states, "one tendon of each type (as defined in Table IWL-2521-1) shall be selected from the first year inspection sample and designated as a common tendon. Each common tendon shall be examined during each inspection. A common tendon shall not be detensioned unless required by IWL-3300; and if a common tendon is detensioned, another common tendon of the same type shall be selected from the first year inspection sample."

Issue

As a result of concrete delamination found during the hydro-demolition of the reactor building wall for steam generator replacement in 2009, all of the vertical and more than half of the hoop tendons have to be retensioned. These retensioned tendons include the common vertical tendon and may also include common hoop tendon.

Request

Provide information on how common hoop and vertical tendons will be selected since all of the vertical and more than half of the hoop tendons have been retensioned due to concrete delamination found during the hydro-demolition of the reactor building wall for steam generator replacement in 2009.

Response

A new concrete delamination was identified in Reactor Building Bay 5-6, during retensioning of the containment tendons in mid-March 2011. As a result, the LRA and responses to RAIs previously submitted to the NRC concerning the Concrete Containment Tendon Prestress Program have been impacted. Accordingly, the following response is provided to address the RAI and the recent operating experience:

CR-3 will develop and submit a plant-specific Concrete Containment Tendon Prestress Program. The plant-specific AMP will be submitted to the NRC for review at least one year prior

to the PEO. The AMP will address plant operating experience from the recent concrete delaminations and provide a discussion of tendon surveillances, including use of common tendons during the PEO. The plant-specific AMP will follow the criteria of NUREG-1800, SRP-LR, Revision 2. In addition, CR-3 will develop and submit a revised Tendon Stress Relaxation Analysis and evaluation as part of the plant-specific Concrete Containment Tendon Prestress Program commitment.

This response has resulted in changes to the LRA, previous RAI Responses, and in development of a new License Renewal Commitment #32. Refer to the information provided in Enclosure 2 for the LRA and Commitment #32 and in Enclosure 3 for previous RAI responses.

PROGRESS ENERGY FLORIDA, INC.

CRYSTAL RIVER UNIT 3

DOCKET NUMBER 50 - 302 / LICENSE NUMBER DPR - 72

ENCLOSURE 2

**AMENDMENT #21 CHANGES TO THE LICENSE RENEWAL
APPLICATION**

AMENDMENT #21 CHANGES TO THE LICENSE RENEWAL APPLICATION

Source of Change	License Renewal Application (LRA) Amendment 21 Changes																	
RAI 3.3.2.2.4-2	<p>On LRA page 3.3-321, Table 3.3.2-42, revise the aging management review (AMR) line for the Seal Return Cooler Components fabricated from stainless steel, exposed to treated water (inside) for the aging effect cracking due to stress corrosion cracking (SCC) such that the aging management program (AMP) applied is the combination of Water Chemistry and One-Time Inspection, aligned to Volume 2 Item VII.E1-9 that rolls up to Table 1, Item 3.3.1-07, with a Standard Note E as shown below:</p> <table border="1" data-bbox="439 604 1394 667"> <tr> <td data-bbox="439 604 731 667">Cracking due to SCC</td> <td data-bbox="731 604 997 667">Water Chemistry and One-Time Inspection</td> <td data-bbox="997 604 1136 667">VII.E1-9 (A-69)</td> <td data-bbox="1136 604 1281 667">3.3.1-07</td> <td data-bbox="1281 604 1394 667">E</td> </tr> </table>						Cracking due to SCC	Water Chemistry and One-Time Inspection	VII.E1-9 (A-69)	3.3.1-07	E							
Cracking due to SCC	Water Chemistry and One-Time Inspection	VII.E1-9 (A-69)	3.3.1-07	E														
RAIs B.3.3-1, B.3.3-2, B.3.3-3, B.3.3-4	<p>Revise LRA Section 3.5.2.1.1, on page 3.5-5 to add the plant-specific Concrete Containment Tendon Prestress Program to the list of Aging Management Programs.</p> <p>Revise LRA Table 3.5.1 item 3.5.1-07, on page 3.5-33 with the following:</p> <table border="1" data-bbox="373 884 1460 1682"> <thead> <tr> <th data-bbox="373 884 480 961">Item Number</th> <th data-bbox="480 884 649 961">Component/Commodity</th> <th data-bbox="649 884 807 961">Aging Effect/Mechanism</th> <th data-bbox="807 884 966 961">Aging Management Program</th> <th data-bbox="966 884 1146 961">Further Evaluation Recommended</th> <th data-bbox="1146 884 1460 961">Discussion</th> </tr> </thead> <tbody> <tr> <td data-bbox="373 961 480 1682">3.5.1-07</td> <td data-bbox="480 961 649 1682">Prestressed containment tendons</td> <td data-bbox="649 961 807 1682">Loss of prestress due to relaxation, shrinkage, creep, and elevated temperature</td> <td data-bbox="807 961 966 1682">TLAA evaluated in accordance with 10 CFR 54.21(c)</td> <td data-bbox="966 961 1146 1682">Yes, TLAA</td> <td data-bbox="1146 961 1460 1682"> <p>Further evaluation is provided in Subsection 3.5.2.2.1.5. A revised TLAA in accordance with 10 CFR 54.21(c)(1)(iii) will be submitted to the NRC as part of a plant-specific Concrete Containment Tendon Prestress Program commitment as stated in Subsections 4.5.1 and A.1.2.4. The TLAA uses a plant specific AMP in accordance with NUREG-1800, Revision 2 rather than NUREG-1801, Section X.S1.</p> <p>A commitment to develop a plant-specific AMP in accordance with NUREG-1800, Revision 2, rather than the NUREG-1801, X.S1 program, is provided in Subsections A.1.1.41 and B.3.3.</p> </td> </tr> </tbody> </table> <p>Revise LRA Table 3.5.2-1, on page 3.5-68, for the line items applicable to Tendons in Air-Outdoor and in Air-Indoor subject to Loss of Prestress, to change the Notes column from Note "A" to Note "E".</p>						Item Number	Component/Commodity	Aging Effect/Mechanism	Aging Management Program	Further Evaluation Recommended	Discussion	3.5.1-07	Prestressed containment tendons	Loss of prestress due to relaxation, shrinkage, creep, and elevated temperature	TLAA evaluated in accordance with 10 CFR 54.21(c)	Yes, TLAA	<p>Further evaluation is provided in Subsection 3.5.2.2.1.5. A revised TLAA in accordance with 10 CFR 54.21(c)(1)(iii) will be submitted to the NRC as part of a plant-specific Concrete Containment Tendon Prestress Program commitment as stated in Subsections 4.5.1 and A.1.2.4. The TLAA uses a plant specific AMP in accordance with NUREG-1800, Revision 2 rather than NUREG-1801, Section X.S1.</p> <p>A commitment to develop a plant-specific AMP in accordance with NUREG-1800, Revision 2, rather than the NUREG-1801, X.S1 program, is provided in Subsections A.1.1.41 and B.3.3.</p>
Item Number	Component/Commodity	Aging Effect/Mechanism	Aging Management Program	Further Evaluation Recommended	Discussion													
3.5.1-07	Prestressed containment tendons	Loss of prestress due to relaxation, shrinkage, creep, and elevated temperature	TLAA evaluated in accordance with 10 CFR 54.21(c)	Yes, TLAA	<p>Further evaluation is provided in Subsection 3.5.2.2.1.5. A revised TLAA in accordance with 10 CFR 54.21(c)(1)(iii) will be submitted to the NRC as part of a plant-specific Concrete Containment Tendon Prestress Program commitment as stated in Subsections 4.5.1 and A.1.2.4. The TLAA uses a plant specific AMP in accordance with NUREG-1800, Revision 2 rather than NUREG-1801, Section X.S1.</p> <p>A commitment to develop a plant-specific AMP in accordance with NUREG-1800, Revision 2, rather than the NUREG-1801, X.S1 program, is provided in Subsections A.1.1.41 and B.3.3.</p>													

(continued)

Source of Change	License Renewal Application (LRA) Amendment 21 Changes								
RAls B.3.3-1, B.3.3-2, B.3.3-3, B.3.3-4 (continued)	<p>Replace the information in LRA Subsection 4.5.1, on Page 4.5-1, previously provided in the CR-3 Letter 3F1210-06 (ADAMS Accession No. ML103540095), with the following:</p> <p style="margin-left: 40px;">4.5.1 TENDON STRESS RELAXATION ANALYSIS</p> <p>CR-3 will develop and submit a revised Tendon Stress Relaxation Analysis as part of the plant-specific Concrete Containment Tendon Prestress Program commitment identified in Subsection A.1.1.41.</p> <p>Replace LRA Appendix A.1.1.41, on Page A-21, from Letter 3F1210-03 (ADAMS Accession No. ML103470140) with the following:</p> <p style="margin-left: 40px;">A.1.1.41 Concrete Containment Tendon Prestress Program Commitment.</p> <p>CR-3 will develop and submit a plant-specific Concrete Containment Tendon Prestress aging management program (AMP) to address plant operating experience from the concrete delaminations; include any revised Minimum Required Values and plans and schedules for revising the plant-specific program basis and implementation documents; include details for collecting surveillance data, performing the regression analyses and log-linear trend plots, and a schedule for performing the tendon surveillances; provide a discussion of tendon surveillances, including re-stressed tendons and any remaining undisturbed tendons; and provide a discussion of tendon surveillances, including use of common tendons during the period of extended operation. The AMP will include a revised Tendon Stress Relaxation Analysis and evaluation. The AMP will follow the criteria of NUREG-1800, Standard Review Plan for Review of License Renewal Applications for Nuclear Power Plants, Revision 2, and will ensure aging effects are adequately managed during the period of extended operation.</p> <p>Replace LRA Appendix A.1.2.4, on Page A-38, submitted with the LRA and revised by CR-3 Letter 3F1210-03 (ADAMS Accession No. ML103470140) with the following:</p> <p style="margin-left: 40px;">A.1.2.4 Concrete Containment Tendon Prestress</p> <p>CR-3 will develop and submit a revised Tendon Stress Relaxation Analysis and evaluation as part of the plant-specific Concrete Containment Tendon Prestress Program commitment identified in Subsection A.1.1.41.</p> <p>Revise LRA Table B-1, on Page B-11, to delete the following row from Table B-1 previously added by Letter 3F1210-03 (ADAMS Accession No. ML103470140):</p> <table border="1" data-bbox="442 1507 1395 1602"> <tr> <td style="width: 10%;">X.S1</td> <td style="width: 20%;">Concrete Containment Tendon Prestress</td> <td style="width: 20%;">Concrete Containment Tendon Prestress Program</td> <td style="width: 50%;">Existing program consistent with NUREG-1801 with exception</td> </tr> </table> <p>Revise LRA Table B-1, on Page B-11, to add the following new plant-specific program:</p> <table border="1" data-bbox="442 1696 1395 1791"> <tr> <td style="width: 10%;">None</td> <td style="width: 20%;">Not applicable</td> <td style="width: 20%;">Plant-specific Concrete Containment Tendon Prestress Program</td> <td style="width: 50%;">Not applicable – Plant Specific</td> </tr> </table> <p style="text-align: right;">(continued)</p>	X.S1	Concrete Containment Tendon Prestress	Concrete Containment Tendon Prestress Program	Existing program consistent with NUREG-1801 with exception	None	Not applicable	Plant-specific Concrete Containment Tendon Prestress Program	Not applicable – Plant Specific
X.S1	Concrete Containment Tendon Prestress	Concrete Containment Tendon Prestress Program	Existing program consistent with NUREG-1801 with exception						
None	Not applicable	Plant-specific Concrete Containment Tendon Prestress Program	Not applicable – Plant Specific						

Source of Change	License Renewal Application (LRA) Amendment 21 Changes			
RAIs B.3.3-1, B.3.3-2, B.3.3-3, B.3.3-4 (continued)	<p>Replace LRA Appendix B.3.3, on Page B-116 previously added by CR-3 Letter 3F1210-03 (ADAMS Accession No. ML103470140) with the following.</p> <p style="text-align: center;">B.3.3 Plant-specific Concrete Containment Tendon Prestress Program Commitment</p> <p>CR-3 will develop and submit a plant-specific Concrete Containment Tendon Prestress aging management program (AMP). The plant-specific AMP will be submitted to the NRC for review at least one year prior to the period of extended operation (PEO). The plant-specific AMP will address plant operating experience from the concrete delaminations; include any revised Minimum Required Values and plans and schedules for revising the plant-specific program basis and implementation documents; include details for collecting surveillance data, performing the regression analyses and log-linear trend plots, and a schedule for performing the tendon surveillances; provide a discussion of tendon surveillances, including re-stressed tendons and any remaining undisturbed tendons; and provide a discussion of tendon surveillances, including use of common tendons during the PEO. The plant-specific AMP will ensure aging effects are adequately managed during the PEO. The plant-specific AMP will follow the criteria of NUREG-1800, Standard Review Plan for Review of License Renewal Applications for Nuclear Power Plants (SRP-LR) Revision 2. In addition, CR-3 will develop and submit a revised Tendon Stress Relaxation Analysis and evaluation as part of the plant-specific Concrete Containment Tendon Prestress Program commitment.</p> <p>The commitment to develop and submit a plant-specific Concrete Containment Tendon Prestress Program requires a revision to the CR-3 License Renewal Commitments to add new Commitment #32 as follows:</p>			
32	CR-3 will develop and submit a plant-specific Concrete Containment Tendon Prestress aging management program (AMP) to address plant operating experience from the concrete delaminations; include any revised Minimum Required Values and plans and schedules for revising the plant-specific program basis and implementation documents; include details for collecting surveillance data, performing the regression analyses and log-linear trend plots, and a schedule for performing the tendon surveillances; provide a discussion of tendon surveillances, including re-stressed tendons and any remaining undisturbed tendons; and provide a discussion of tendon surveillances, including use of common tendons during the period of extended operation. The AMP will include a revised Tendon Stress Relaxation Analysis and evaluation. The AMP will follow the criteria of NUREG-1800, Standard Review Plan for Review of License Renewal Applications for Nuclear Power Plants, Revision 2, and will ensure aging effects are adequately managed during the period of extended operation.	A.1.1.41	At least one year prior to the period of extended operation	Concrete Containment Tendon Prestress Program RAIs B.3.3-1 B.3.3-2, B.3.3-3, B.3.3-4

PROGRESS ENERGY FLORIDA, INC.

CRYSTAL RIVER UNIT 3

DOCKET NUMBER 50 - 302 / LICENSE NUMBER DPR - 72

ENCLOSURE 3

CHANGES TO PREVIOUS RAI RESPONSES

CHANGES TO PREVIOUS RAI RESPONSES

As a result of a new concrete delamination which was identified in Reactor Building Bay 5-6 during retensioning of the containment tendons in mid March 2011, the following docketed letters have been impacted. The following additional information is provided:

Letter 3F0211-03, Crystal River Unit 3 – Response to Request for Additional Information Associated with Open Item 3.5-1 from the Safety Evaluation Report with Open Items Related to the License Renewal of Crystal River Unit 3, Nuclear Generating Plant (TAC NO. ME0274), dated February 25, 2011, (ADAMS Accession No. ML110600406) provided a schedule of monitoring and testing that will be performed to ensure that the Reactor Building concrete delamination has been adequately repaired. The letter stated the summary schedule for the Reactor Building testing, monitoring and examination contained in the enclosure was provided for information and was subject to change. The schedule provided for the Reactor Building testing activities is no longer applicable.

Letter 3F1210-09, Crystal River Unit 3 – Response to Request for Additional Information for the Review of the Crystal River Unit 3 Nuclear Generating Plant, License Renewal Application (TAC NO. ME0274) and Amendment #17 dated December 29, 2010 (ADAMS Accession No. ML110030015) provided a supplemental response to RAI B.2.26-1. The cover letter states, "The information regarding the Concrete Containment Tendon Prestress Program provided in PEF letters to the NRC, 3F1210-03, dated December 8, 2010, (ML103470140); 3F1210-06, dated December 16, 2010; and Enclosure 2 of this letter completes the required updates." A plant-specific Concrete Containment Tendon Prestress Program will be submitted to the NRC for review at least one year prior to the PEO. In addition, the Supplemental Response to RAI B.2.26-1 in Enclosure 1 referred to the Concrete Containment Tendon Prestress Program and should now refer to the plant-specific program.

Letter 3F1210-06, Crystal River Unit 3 – Response to Request for Additional Information for Review of the Crystal River Unit 3, Nuclear Generating Plant License Renewal Application (TAC NO. ME0274) and Amendment #16, dated December 16, 2010 (ADAMS Accession No. ML103540095) provided an updated LRA Section 4.5.1 for the Tendon Stress Relaxation Analysis. CR-3 will develop and submit a revised Tendon Stress Relaxation Analysis as part of the plant-specific Concrete Containment Tendon Prestress Program commitment.

Letter 3F1210-03, Crystal River Unit 3 – Response to Request for Additional Information for Review of the Crystal River Unit 3, Nuclear Generating Plant License Renewal Application (TAC NO. ME0274) and Amendment #15, dated December 8, 2010 (ADAMS Accession No. ML103470140) provided RAI Response B.2.26-5, RAI Response B.2.26-7, RAI Response B.2.26-8, RAI Response B.2.28-4, and RAI Response 4.5.1-1 in Enclosure 1. Enclosure 2 added LRA Appendix A.1.1.41 and Appendix B.3.3, and revised Appendix A.1.2.4.

For Enclosure 1, the plant-specific Concrete Containment Tendon Prestress Program that will be submitted to the NRC for review will provide additional information regarding plans and frequency for performing Reactor Building testing, monitoring, and examination during the PEO.

For Enclosure 2, CR-3 will develop and submit a plant-specific Concrete Containment Tendon Prestress aging management program to the NRC for review. CR-3 will develop

and submit a revised Tendon Stress Relaxation Analysis and evaluation as part of the plant-specific Concrete Containment Tendon Prestress Program commitment.

Letter 3F1110-03, Crystal River Unit 3 – Response to Request for Additional Information for Review of the Crystal River Unit 3, Nuclear Generating Plant, License Renewal Application (TAC NO. ME0274) - Containment Opening and Amendment #14, dated November 23, 2010 (ADAMS Accession No. ML103280373) provided a response to RAI B.2.25-4 and other RAIs concerning the changes to the ASME Section XI, Subsection IWL and IWE Programs and LRA as a result of the initial containment concrete delamination. As a result of the concrete delamination in mid-March 2011 and RAI responses subsequent to Letter 3F1110-03, a plant-specific Concrete Containment Tendon Prestress Program will be provided at least one year prior to the PEO. The plant-specific program will address plant operating experience from the concrete delaminations.

FLORIDA POWER CORPORATION

CRYSTAL RIVER UNIT 3

DOCKET NUMBER 50-302/LICENSE NUMBER DPR-72

ENCLOSURE 4

LIST OF REGULATORY COMMITMENTS

LIST OF REGULATORY COMMITMENTS

The following table identifies those actions committed by Florida Power Corporation (FPC) in this document. Any other actions discussed in the submittal represent intended or planned actions by FPC. They are described to the NRC for the NRC's information and are not regulatory commitments. Please notify the Superintendent, Licensing and Regulatory Programs of any questions regarding this document or any associated regulatory commitments.

COMMITMENT	DUE DATE
<p>CR-3 will develop and submit a plant-specific Concrete Containment Tendon Prestress aging management program (AMP) to address plant operating experience from the concrete delaminations; include any revised Minimum Required Values and plans and schedules for revising the plant-specific program basis and implementation documents; include details for collecting surveillance data, performing the regression analyses and log-linear trend plots, and a schedule for performing the tendon surveillances; provide a discussion of tendon surveillances, including re-stressed tendons and any remaining undisturbed tendons; and provide a discussion of tendon surveillances, including use of common tendons during the period of extended operation. The AMP will include a revised Tendon Stress Relaxation Analysis and evaluation. The AMP will follow the criteria of NUREG-1800, Standard Review Plan for Review of License Renewal Applications for Nuclear Power Plants, Revision 2, and will ensure aging effects are adequately managed during the period of extended operation.</p> <p>This is License Renewal Commitment #32.</p>	<p>FPC will submit the aging management program at least one year prior to the period of extended operation (PEO).</p>